

## CLAIMS

What is claimed is:

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1. A method performed by a packet switching system, the method comprising:  
 a plurality of input components of the packet switching system sending a plurality  
 5 of packets to a plurality of output components over a plurality of interconnection  
 networks;  
     the packet switching system recognizing an error within the packet switching  
 system; and  
     the packet switching system notifying the plurality of input components of the  
 10 error.
  2. The method of claim 1, wherein notifying the plurality of input components  
 includes sending a packet containing an indication of the error to each of the plurality of  
 input components.
  3. The method of claim 1, wherein notifying the plurality of input components  
 15 includes sending a packet containing an indication of the error.
  4. The method of claim 3, wherein notifying the plurality of input components  
 includes sending a packet to a broadcast component of the packet switching system, and  
 further comprising the broadcast component broadcasting a status notification packet  
 containing an indication of the error to the plurality of input components.
  - 20 5. The method of claim 4, wherein notifying the plurality of input components  
 includes sending a second packet to a second broadcast component of the packet  
 switching system, and further comprising the second broadcast component broadcasting a  
 second status notification packet containing a second indication of the error to the  
 plurality of input components

6. The method of claim 1, further comprising each of the plurality of input components updating one or more status data structures in response to receiving a notification of the error.

5 7. The method of claim 6, further comprising each of the plurality of input components determining which of a plurality of paths leading to a destination output component over which to send a particular packet, the path determined by referencing the one or more status data structures.

10 8. The method of claim 6, wherein each of the plurality of input component references its one or more status data structures in determining which of a plurality of paths leading to a destination output component over which to send a particular packet.

9. The method of claim 6, wherein the one or more data structures include an output availability table to indicate whether a possible path through the packet switching system from the input component to a particular destination is available.

15 10. The method of claim 6, further comprising disabling at least one of the plurality of input components from sending packets to a particular destination of the packet switching system when a number of possible paths through the packet switching system leading to a particular destination falls below a predetermined threshold value.

20 11. The method of claim 6, wherein the one or more data structures include a fault indication for a first output component over a first interconnection network of the plurality of interconnection networks, and further comprising sending a first packet over the first interconnection network to a second output component.

12. The method of claim 6, wherein the one or more data structures include a link availability table to indicate which of a plurality of outputs of a particular input component are available.

13. A packet switching system comprising:  
a plurality of input components, each of the plurality of input components  
maintaining a fault data structure,  
a plurality of output components; and  
5 a plurality of interconnection networks, each of the plurality of interconnection  
networks coupled to each of the plurality of input components and to each of the plurality  
of the output components to provide a plurality of paths between each of the plurality of  
input components and the plurality of output components;  
wherein the fault data structure of at least one of the plurality of input components  
10 includes an indication of which interconnection networks the at least one input component  
may send packets through to reach a particular output component.

14. The packet switching system of claim 13, further comprising a broadcast  
mechanism to receive an indication of a problem within the packet switching system and to  
notify the plurality of input components of the problem.

15 15. The packet switching system of claim 14, wherein the broadcast mechanism is  
located in one of the plurality of interconnection networks.

16. The packet switching system of claim 14, wherein the broadcast mechanism is  
located in each of the plurality of interconnection networks.

17. The packet switching system of claim 13, wherein each of the input  
20 components references its associated fault data structure in determining which of the  
plurality of interconnection network through which to send a particular packet.

18. The packet switching system of claim 13, wherein the fault data structure  
includes an output availability indication of which of the plurality of interconnection  
networks through which its associated input component may send packets.

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